

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H01Q 11/08, 5/00		A1	(11) International Publication Number: WO 99/41803
			(43) International Publication Date: 19 August 1999 (19.08.99)
(21) International Application Number: PCT/GB99/00469		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 15 February 1999 (15.02.99)		Published With international search report.	
(30) Priority Data: 9803273.3 16 February 1998 (16.02.98) GB			
(71) Applicant (for all designated States except US): UNIVERSITY OF SURREY (GB/GB); Guildford, Surrey GU2 5XH (GB).			
(72) Inventors; and (75) Inventors/Applicants (for US only): SAUNDERS, Simon, Reza (GB/GB); 227 Shawfield Road, Ash, Surrey GU12 5DL (GB). AGIUS, Andreas-Albertos (GR/GB); 5 Burnham Gate, Stoke Road, Guildford, Surrey GU1 1BW (GB).			
(74) Agent: MATHISEN, MACARA & CO.; The Coach House, 6-8 Swakeleys Road, Ickenham, Uxbridge, Middlesex UB10 8BZ (GB).			

(54) Title: **ADAPTIVE MULTIFILAR ANTENNA**

(57) Abstract

A multifilar antenna (200) comprises n spaced antenna filaments, where n is an integer greater than 1; a matching circuit (210) for matching the characteristic impedance of the antenna to that of a transmitting and/or receiving apparatus; a weighting circuit (240) for applying respective gain and phase adjustments to signals passed to or from the n filaments; switch means (310) associated with each filament for selectively altering the electrical length and/or interconnections of the filaments; means for detecting electrical properties of the multifilar antenna with respect to the frequency, polarisation and/or direction of propagation of a signal to be received or transmitted by the multifilar antenna and/or impedance matching of the antenna; and control means (230), responsive to the detecting means, for controlling the operation of the matching circuit (210), the weighting circuit (240) and the switch means (310) to adjust the properties of the multifilar antenna (200) to suit better a current signal to be received or transmitted.

